US006351271B1

(12) **United States Patent**
Mainwaring et al.

(10) **Patent No.: US 6,351,271 B1**
(45) **Date of Patent: Feb. 26, 2002**

(54) **METHOD AND APPARATUS FOR SENDING AND RECEIVING LIGHTWEIGHT MESSAGES**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/169,750**

(22) Filed: **Oct. 9, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/062,144, filed on Oct. 9, 1997, and provisional application No. 60/001,875, filed on Oct. 8, 1998.

(51) **Int. Cl.**[7] **G06F 7/00**

(52) **U.S. Cl.** **345/744**; 707/12

(58) **Field of Search** 707/9, 10, 11, 707/12; 345/330, 331, 332, 335, 753, 751, 759, 744, 853

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,172,969	A	10/1979	Levine et al.
4,536,887	A	8/1985	Kaneda et al.
4,780,883	A	10/1988	O'Connor et al.

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

EP	0 730 365 A2	9/1996	..... H04M/3/56

OTHER PUBLICATIONS

Sony Electronics, Inc., *How the Cyberframe Viewer Works*, http://www.sel.sony.com, 1999.

Sony Electronics, Inc., *Cyberframe Models*, http://www.sel-.sony.com, 1999.

BinaryLabs, Inc., http://www.peoplepost.com.

PhoneMate, Answering Machine & Cordless Telephone Easy To Use Owner's Guide, Dec. 1993.

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(57) **ABSTRACT**

The present invention teaches methods and apparatus for social interaction allowing users to communicate at their leisure (asynchronously or "semi-synchronously") by providing simple, flexible access to a persistent, shared space. For example, an electronic communication system according to one embodiment provides a shared persistent data space to a plurality of clients. This system comprises a server and at least two input/display units (IDUS) which clients use to access shared persistent data in the form of group boards. The group boards store discrete notes in a group database made accessible to all members of the group. In order to allow clients to select a desired group, each IDU includes an input detection space operable to receive user input indicative of a request to access a specific group. The input detection space can take on many forms such as electromechanical buttons, touch or pressure sensitive devices, a digital inking device, a token input device (tokens each have some identification in the form of circuitry or such), or a voice command device. In order to allow clients to enter data into the board group database, each IDU includes a note data input device. Like the input detection space, a wide variety of note data input devices are contemplated. For example, a touch, stylus or pressure sensitive device would be suitable. A scanning device also works well, creating a unique persistent space wherein users can exchange discrete note messages of a variety of forms such as handwritten notes and photographs.

73 Claims, 11 Drawing Sheets